

07 May 2021

Mr Ted O'Brien MP
Chair
House of Representatives Standing Committee on the Environment and Energy

Submitted online

Dear Mr O'Brien,

Inquiry into the current circumstances, and the future need and potential for dispatchable energy generation and storage capability in Australia

Energy Networks Australia appreciates the opportunity to provide a submission to the Standing Committee on the Environment and Energy's (the Committee) [Inquiry into the current circumstances, and the future need and potential for dispatchable energy generation and storage capability in Australia](#).

Energy Networks Australia is the national industry body representing Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

Energy storage devices have an important role to play in the transitioning electricity system, bringing benefits to communities, energy users and electricity networks, and we welcome the Committee's consideration of these issues.

The energy transformation

Australia's energy system is undergoing a significant transition, moving away from large coal and gas centralised generation to smaller scale dispersed generation that is increasingly renewable generation.

This transformation has fundamentally changed the role of the distribution network. Traditionally, distribution networks supplied energy downstream to end-use customers, however it now increasingly provides two-way flows as customers both consume and export electricity.

The challenges associated with the energy transformation are being addressed by a number of processes at both jurisdictional and national levels, and Energy Networks Australia strongly supports a regulatory framework that facilitates network businesses providing innovative solutions that are in the long-term interests of customers.

Changes in the operation of the distribution system

Distribution network service providers (**DNSPs**) must continue to integrate a growing volume of distributed energy resources (**DER**) whilst providing customers with a safe, reliable and efficient service. DNSPs have therefore identified four key capabilities that DNSPs will need to continue to mature as they evolve into distributed system operators (**DSOs**) with a continued focus on delivering customer value.

These capabilities have been incorporated into a future DSO vision that Energy Networks Australia is developing in collaboration with members and other key stakeholders, and include:

» **Dynamic system operation**

In a future energy system with many more dynamic parts, it will be vital for DSOs to plan, maintain, and importantly *optimise* the network for customer safety, reliability and choice. This is likely to include (but not limited to) delivery of dynamic operating limits.

» **Flexible access services**

Not all customers will use the network in the same way and their use may change over time. DSOs will need to develop new capabilities and offerings to meet diverse customer requirements and provide their desired services. In addition, it is likely to become important to efficiently allocate network capacity on a more dynamic basis than today as customers' needs continue to evolve.

» **Dynamic network pricing**

If implemented effectively, moving towards dynamic network pricing will deliver system affordability and equity to customers by encouraging and incentivising better bi-directional network usage that maximises the benefit to all customers. This is a key enabler to stimulate the innovation required to integrate new loads such as electric vehicles at least cost.

» **System services**

DSOs must maximise the value of their assets and develop new capabilities to support and provide the services that customers want and value. This includes ensuring that the distribution network does its part in the value chain to support a stable, clean and reliable energy system alongside transmission, generation, retail and other future participants.

While these are the broad responsibilities of a DSO, the exact mechanisms by which they will be delivered are still being developed. Whilst each DNSP is currently at different points along the maturity spectrum, predominantly driven by the specific needs of their customers, the level of decentralisation in their service area, and the penetration of smart meter fleet the Vision will assist in setting a broad direction for future national harmonisation.

It is therefore critical that the regulatory framework facilitates DNSPs' adoption of technologies to meet changing customer needs.

Current regulatory framework

Energy storage devices, such as grid connected batteries, represent an increasingly efficient option to provide a number of distribution services, including:

- » Voltage support to enable additional hosting of distributed generation,
- » Peak demand management to defer network upgrades – both at a local level and at a regional level,
- » Optionality – can deal with an increase in load and an increase in generation,
- » Managing fault levels in areas with high levels of solar generation to ensure appropriate operation of protection schemes, and
- » Phase balancing.

While DNSPs can use energy storage devices to provide distribution services, the Australian Energy Regulator's (AER) existing service classifications and ring-fencing framework currently limit networks' ability to provide certain battery storage services to customers.

The Energy Security Board's Health of the National Electricity Market Report observes that:

*At present the **ownership of batteries within the network is constrained and this may not be optimal nor fit with the role of the network** if it is to be a platform to provide services.¹*

Without going through the national regime's existing ring-fencing waiver process, which imposes costs, uncertainty of investment recovery and delays delivering benefits to consumers, DNSPs are precluded from increasing the viability of these services by, for example, leasing out spare capacity or offering customers access to a shared storage service. This is commonly referred to as value stacking and allows the same battery storage device to be used for multiple purposes.

The AER, however, is currently further considering the role of energy storage devices in the national electricity market, and a recent issues paper² identifies a number of consumer benefits from value-stacking, including:

- » Location – DNSPs can optimise the location of storage devices to maximise value, and
- » Access – enabling DNSPs to serve as platform providers.

Enabling value-stacking also reduces the cost to all consumers of DNSPs providing network services and would foster the energy storage market and provide incentives for third parties to enter.

Distributor-led storage devices may also support retail contestability in the provision of storage services by offering services to all parties on an equal basis.

Case studies

United Energy is installing 40 new pole-mounted battery energy storage system (BESS) units in the low voltage network as part of a trial to provide network peak demand support (a distribution service). In order to deliver the greatest benefits to consumers and a lower cost outcome for consumers from the installation of the BESS units, United Energy will partner with a retailer selected under a competitive process. The retailer partner intends to use the BESS units for providing frequency control ancillary services, and energy arbitrage (i.e., a non-distribution service). This is an example of a DNSP indirectly (i.e., through a third party) using a neighbourhood battery to also provide non-distribution services to the benefit of all consumers.

Jemena and AusNet Services (in collaboration with ARENA) are undertaking a BESS trial installing a large community size battery in Greenvale to demonstrate how new technologies can enable distribution networks to accommodate increased levels of distributed energy resources and mitigate power quality and stability challenges caused by very high penetration of solar.

Ausgrid is currently undertaking a virtual trial of a neighbourhood battery, which provides both a community storage solution for solar customers (non-distribution service) and provides a more

¹ Energy Security Board, *Volume 1: The ESB Health of the NEM Report 2019*, 24 February 2020, page 39 [emphasis added].

² Australian Energy Regulator, Issues Paper: Updating the Ring-fencing Guidelines for Stand-Alone Power Systems and Energy Storage Devices, November 2020.

cost-efficient alternative to traditional poles and wires investment to address peak demand (distribution service). The first phase of Ausgrid's trial aims to demonstrate how a neighbourhood battery can deliver cost savings for solar customers, while addressing localised network needs. This is an example of a DNSP directly using a neighbourhood battery to also provide non-distribution services to the benefit of all consumers.

Proposed changes to the regulatory framework

As mentioned above, there are barriers in the current regulatory framework that limit DNSPs' ability to provide certain battery storage services to customers.

Energy Networks Australia is closely engaging in the AER's current Electricity Distribution Ring-fencing Review and advocating for amendments to the framework to ensure that consumers are able to benefit from value stacking.³

In particular, we strongly support amendments to the AER's Electricity Distribution Ring-fencing Guideline that enable DNSPs' indirect use of energy storage devices to provide non-distribution services. Energy Networks Australia is also strongly supportive of amendments to the AER's waiver process that streamline the process and decrease regulatory and investment uncertainty.

In the longer term, through the electricity distribution price review processes, we also encourage further consideration of how the AER classifies the services offered by energy storage devices.

The regulatory framework, including how services are classified and how ring-fencing is approached, needs to be able to accommodate energy storage devices where it is in the long-term interests of consumers. With the right regulatory settings in place, distributor-led storage devices could access a wide array of benefits and assist in reducing network costs for all consumers, and we encourage close collaboration between policy makers on potential solutions.

We once again welcome this consultation and thank you for the opportunity to provide input. If you wish to discuss any of the matters raised in this letter further, please contact Lucy Moon, Head of Regulation at 0419 839 666 or via email on lmooon@energynetworks.com.au.

Yours sincerely,



Andrew Dillon
Chief Executive Officer

³ Please refer to: Energy Networks Australia, [ENA Response to the AER Issues Paper: Updating the Ring-fencing Guidelines for Stand-Alone Power Systems and Energy Storage Devices](#), 18 December 2020.